

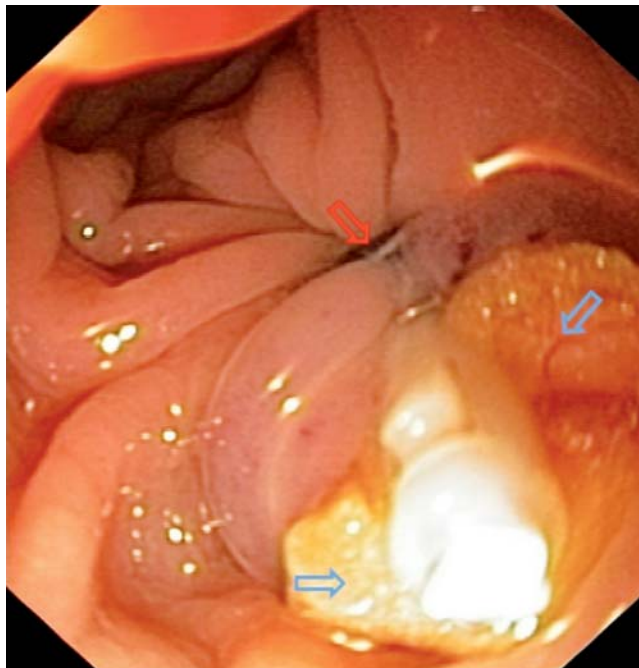
## Endoscopic band ligation to create an omental patch for closure of a colonic perforation

A 56-year-old woman underwent colonoscopy for colorectal cancer surveillance. At a difficult rectosigmoid turn, a 1.5-cm perforation developed, but application of two endoscopic clips (HX-610-090L, Olympus, Tokyo, Japan) failed to close the perforation because of the awkward angle (● Fig. 1). A banding device (MBL-6, Wilson-Cook, Winston-Salem, North Carolina, USA) loaded on a gastroscope was then used to suck the nearby omentum to complete closure of the perforation, aided by one of the clips serving as a landmark to pinpoint the location of the perforation (● Fig. 2). Subsequently, a computed tomography (CT) scan of the whole abdomen with rectal contrast revealed pneumoperitoneum, pneumoretroperitoneum, pneumomediastinum, and right pneumothorax, and confirmed absence of contrast leakage (● Fig. 3). The patient was admitted and the pneumothorax was successfully treated with conservative measures, that is, the patient had no oral intake for 1 week and was given broad-spectrum antibiotics. After another 2 days, she was able to tolerate a step-up diet and was discharged. At the 1-month follow-up she had no complaints and reported normal bowel movement.

The rectosigmoid colon is vulnerable to perforation because of its angulation [1, 2]. Perforation at the rectosigmoid junction can lead to pneumoperitoneum as well as pneumoretroperitoneum because the junction is located within both the retroperitoneal and the intraperitoneal spaces. A pneumothorax may occur when air dissects through the mediastinal pleura into the pleural space [3]. The success rate of clipping for closure of a colonic perforation is about 42%–82% [4,5]. For successful endoscopic clipping the perforation should be less than 10 mm in size, as larger sizes carry a significant risk of unfavorable outcome [5], and there needs to be enough space available for passing the scope under direct visualization [4,5]. In our patient clipping was unsuccessful as the perforation was more than 1 cm in size and located at the angulated part of the rectosigmoid colon.



**Fig. 1** Endoscopic view of the perforation (blue arrow) following a failed attempt at clipping in a 56-year-old woman undergoing colonoscopy for colorectal cancer surveillance. A clip is seen at one corner of the hole (red arrow).

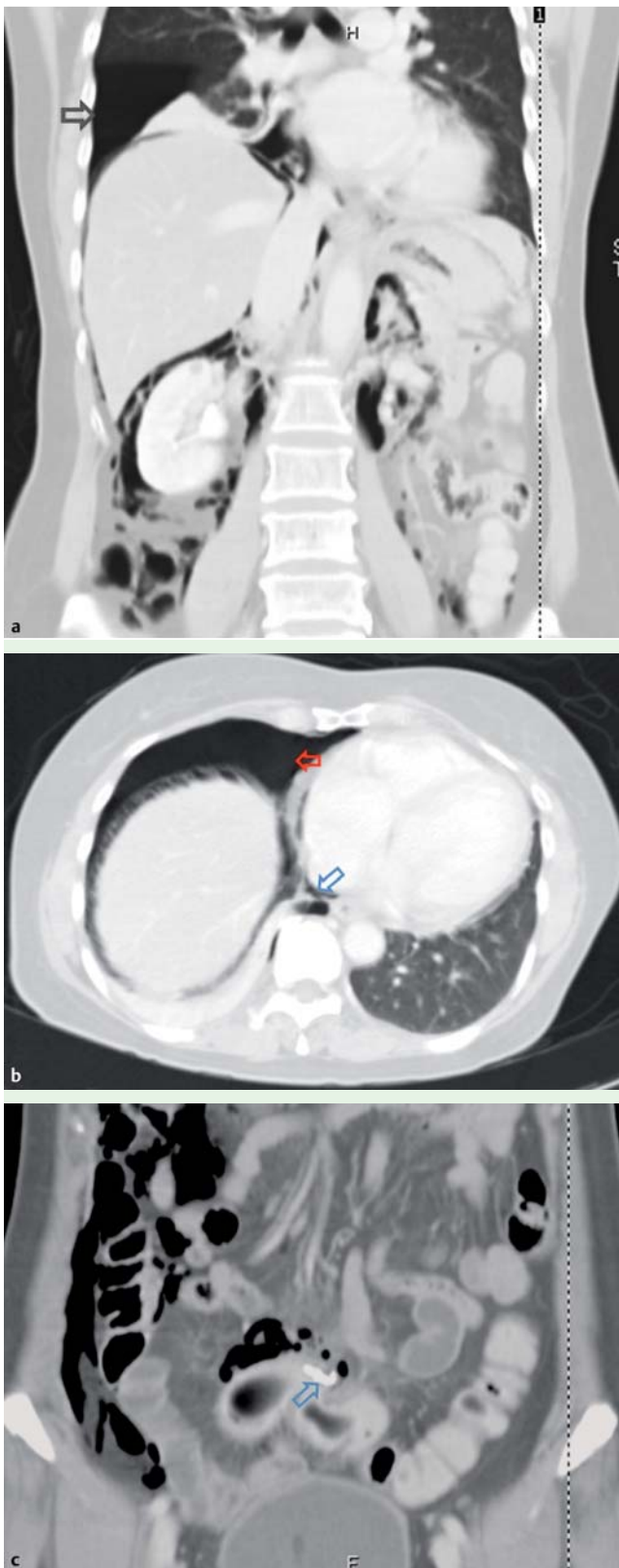


**Fig. 2** Endoscopic view of successful closure of the colonic perforation by banding ligation. A black rubber band (red arrow) was used and an omental patch (blue arrows) was created.

Fortunately, we were able to use one of the previously deployed clips as a guide and suck the nearby omentum to create an omental patch endoscopically.

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**Competing interests:** None



**Fig. 3** Computed tomography (CT) scans showing: **a** pneumoperitoneum, pneumoretroperitoneum, and right pneumothorax (gray arrow); and **b** pneumomediastinum (blue arrow) and right pneumothorax (red arrow). **c** The CT scan with rectal contrast confirmed the absence of contrast leakage at the site of perforation, using the clip as a landmark (blue arrow).

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## Bibliography

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